

CBCS SCHEME

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18CS81

Eighth Semester B.E. Degree Examination, July/August 2022 Internet of Things

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What is Internet of Things (IoT)? Explain Genesis of IoT, with a neat diagram. (08 Marks)
b. Compare IT and OT Networks with different criterion. (08 Marks)
c. Explain different challenges faced by IoT. (04 Marks)

OR

- 2 a. Explain One M2M IoT Standardized Architecture, with a neat diagram. (10 Marks)
b. What is a Fog Node? Explain characteristics of Fog Computing Model. (05 Marks)
c. Illustrate various access technologies with respect to distances in core IoT functional stack. (05 Marks)

Module-2

- 3 a. Explain any 5 ways to group sensors into different categories. (05 Marks)
b. List any two advantages of Wireless based solution. Illustrate with a neat diagram, the interaction of Sensors and Actuators, with the Physical World. (07 Marks)
c. What is a Smart Object? Explain its characteristics. (08 Marks)

OR

- 4 a. Explain the following key factors involved in connecting smart objects to the network :
i) Range ii) Frequency bands. (10 Marks)
b. Explain IEEE 802.15.4 IoT Access technology. (10 Marks)

Module-3

- 5 a. Explain the key advantages of IP suite for IoT. (05 Marks)
b. Explain 6 LOWPAN Protocol Header Compression and Fragmentation, with a neat diagram. (08 Marks)
c. Illustrate Routing Protocol for Low Power and Lossy Networks (RPL), with a neat diagram. (07 Marks)

OR

- 6 a. Explain the message format of the following protocols with a neat diagram :
i) Constrained Application Protocol (CoAP).
ii) Message Queuing Telemetry Transport (MQTT). (10 Marks)
b. Describe the Scheduling Management Mechanisms and forwarding Models and Supported by 6 TiSCH. (10 Marks)

Module-4

- 7 a. Explain different types of Data Analysis results with example. (08 Marks)
b. Distinguish between Supervised and Unsupervised Machine Learning. (05 Marks)
c. Explain Elements of Hadoop, with a neat diagram. (07 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. What is Apache Spark? Explain layers in Lambda Architecture, with a neat diagram. (10 Marks)
b. Explain OCTAVE Allegro steps and phases, with a neat diagram. (10 Marks)

Module-5

- 9 a. Explain the following with respect to Arduino Programming :
i) Structures ii) Functions iii) Variables iv) Flow control statements
v) Data type with example. (10 Marks)
b. Explain the steps to install operating system in the SD card of Raspberry Pi. Write a Python program to blink on LED. (10 Marks)

OR

- 10 a. Explain Key Verticals targeted in Smart Cities, with a neat diagram. (10 Marks)
b. Explain Smart City IoT Architecture, with a neat diagram. (10 Marks)

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Eighth Semester B.E. Degree Examination, July/August 2022

Storage Area Networks

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the core elements of data centre along with its key characteristics. (10 Marks)
b. Discuss the process of host access to storage. (06 Marks)
c. Write a short note on evolution of storage architecture. (04 Marks)

OR

- 2 a. Explain in detail disk drive components with suitable diagram. (10 Marks)
b. Discuss the concept of DAS with advantages and disadvantages. (06 Marks)
c. Explain disk partitioning and concatenation. (04 Marks)

Module-2

- 3 a. What is RAID? List different RAID levels where parity technique has been adopted. Explain nested RAID, RAID 3, RAID 5 with diagram. (10 Marks)
b. Write a short note on : i) Node ports ii) Cable and connectors. (06 Marks)
c. Discuss RAID impact on disk performance. (04 Marks)

OR

- 4 a. Explain structure of cache with operations. (10 Marks)
b. List and explain RAID techniques. (06 Marks)
c. List types of intelligent storage systems and explain any one in detail. (04 Marks)

Module-3

- 5 a. Write a note on iSCSI and its topologies. (08 Marks)
b. Explain the advantages of NAS. (08 Marks)
c. Compare CIFS and NFS protocols. (04 Marks)

OR

- 6 a. Explain fibre channel protocol stack with neat diagram and write a short note on its performance and security. (08 Marks)
b. Explain NAS components with diagram. (06 Marks)
c. With a neat diagram explain Gateway network attached storage connectivity. (06 Marks)

Module-4

- 7 a. Discuss the life cycle of BC Planning. (10 Marks)
b. List some important BC technology solutions. Explain the failure analysis in BC. (10 Marks)

OR

- 8 a. Describe backup and restore operation. (10 Marks)
b. Write a short note on : i) Backup architecture ii) Backup purpose. (10 Marks)

Module-5

- 9 a. Mention major local replication technologies. Explain network based local replication. (10 Marks)
b. Discuss flushing the file system buffer. (05 Marks)
c. Explain the uses of local Replicas. (05 Marks)

OR

- 10 a. Write a short note on array based synchronous remote replication. (06 Marks)
b. Explain security threats in backup, replication and archive environment. (06 Marks)
c. Write a note on : i) Assets ii) Vulnerability. (08 Marks)

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